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关于山东临朐山旺的蛙类和翼手类

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最近山东自然历史博物馆从临朐县山旺获得了大量的各种化石。以下所记只是其中的一部分，为两栖类中的蛙类和一个很特别的翼手类。

一、无 尾 类

目 Salientia Cope

亚目 Neobatrachia = Piorvela (Nicholes) Noble

科 蟾蜍科 Buforidae

属 蟾蜍 Bufo Larrenti

种 临朐蟾蜍 *Bufo linquensis* sp. nov.

材料 正面与反面印模两块，几乎完全保存。

地点与层位 山东临朐山旺。中新统。

描述 正，负型标本，较完整，仅缺失小部分。头骨完整的一个，当作正型。其他一个荐椎后部，以及上股骨与后肢的其他部分，不大完全。当作副型的头骨前部缺失很多，而其他部分，特别是后肢都比较好，可以补正型之不足。

骨胳的概况 标本总长；从头前端到荐椎后部为167毫米。头骨长为73毫米；宽为81毫米，显然是这一属中很大的一个个体。也可能比现在活着的一些种都大。

虽然头骨保存很好，但各片头骨的界限都不大清楚。细小的牙和头骨的主要部分(腹视)都可以看到。脊椎和肩胛骨与荐骨部分也很好的保存，特别是后者。这些部分的结构，同一般蛙类差不多，所以用不着详为叙述。

肩胛骨、锁骨和乌喙骨均保存很好，特别是右侧(在岩石上是左边)。

前肢在正型上保存不太好，但在负型上很好，比较起来，后肢，从股骨到趾，保存极佳。

主要的尺度(以毫米计)：

乌喙骨长	22
肱骨长	19
桡骨长	10
尺骨长	13
前肢总长	36
荐骨长	?
坐骨长	6
耻骨长	59
股骨长	55
胫骨长	49
腓骨长	46
后足总长	57

二、翼 手 类

目　翼手类 Order Chiroptera Blumenbach, 1779

亚目　Microchiroptera, Dobson 1875

科　蝙蝠科 Vespertilionidae

属　山旺蝙蝠 Shanwangia gen. nov.

种　意外山旺蝙蝠 *Shanwangia unexpectuta* sp. nov.

材料　一个腹侧视的蝙蝠(图版 II, 上, 二图)。但在负模上较为好些，这些部分比较 以辨认。

地点与层位　同前。

描述　这一标本显示最清楚的为其右翼，和其他标本一样，连同翼膜，均保存完好。 边保存欠佳，今据两者加以记述如下：——

在图版 II 上，左侧为全标本腹视的全形。可惜头后部和肱骨以上大部分均未保存。 边的一个，为以上右边的印模，但头骨大体形状可以辨认。眼孔以前相当清楚，眼孔也 看出，其色较淡。在头的两侧，似有下颌的痕迹，以左边者较为清楚。

脊椎：头后脊椎很受错动，数目也不大清楚。尾椎约为 9—10。

肩带：肩胛、锁骨、乌喙骨均可辨认，两者可以互为印证。

前肢：以右边保存最好(在图为左边)，肱骨、尺骨、桡骨以及五个伸长的指骨十分完 。其翼的印模也很清楚。

腰带：组成腰带的三个骨均保存。肠骨、坐骨均可辨明，耻骨因太小不清楚。

股骨：在右均保存极好，胫骨亦然。腓骨只有右侧的上端和左侧下端可辨认。

足部骨：在右部的各骨，均大体上清楚，和一般的蝙蝠相同，不赘述。

主要尺度（以毫米计）

	山 旺 蝙 蝠	怀俄明蝙蝠[1]
总长	100	125
脊椎	41	52.4
尾	18	34.3
肱骨	30	48
尺骨	48	28
指骨	1, 10	57
	2, 32	49
	3, 51	10.9
	4, 56	11.5
	5, 72	10.1
后肢		
股骨长	17	19.8
胫骨长	21	18.3
足掌及趾骨长	13	—

1) 因本属和美国怀俄明下始新统初期者相近，故附之，以作比较。

鉴定与讨论

由以上关于这个蝙蝠的详细描述，可以很清楚的表示，这是临朐的一个新发现，属于翼手类的蝙蝠，其特性如次：

意外山旺蝙蝠，为一个相当大的蝙蝠，总长约 100 毫米，从全面看，头较小，尾椎约 9—10 节。前肢特大。多数尺度与北美怀俄明下始新统的有爪飞蝠相近。山旺标本前指也具有爪。

临朐山旺地区，除以上覆盖的玄武岩外，依地质图，石灰岩的分布(寒武纪或奥陶纪)与之相距是很远的，因此很难说能在洞穴中生活的动物能到这个地方。再进一步说，山旺万卷书的地层，是一种很特殊的情况下的堆积，如树叶、蝌蚪、蛙等均可保存，而这个蝙蝠，似乎迷失了路，飞到这个地方。它以两肢伸展开的情况存在于山旺的地层之中也是十分有趣的。因此，取名意外山旺蝙蝠。以表明这堆积情况十分特别。

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ON SOME SALIENTIA AND CHIROPTERA FROM SHANWANG, LINQU, SHANDONG

Yang Jungjien

Recently the members of the Natural History Museum of Jinan, Shandong have obtained a great number of fossils of various kinds from the famous locality of Shanwang (Wanchuanshue) Shandong. The present notes are given only about the Salientia and Chiroptera.

I, Amphibia Blaincille

Order Salientia Cope
Sub-order Neobatrachia (Nicholes) Noble
Family Buforidae
***Bufo* Larrenti**
***Bufo linquensis* sp. nov.**

Material: Both Positive and counterprint of a nearly complete specimen.

Locality and horizons: Shanwang, Linqu, Shandong. Miocene.

Description: Both specimens are on the whole very well preserved. Nevertheless, Both are a little imcomplete. The completely preserved skull is considered as the positive one, but its part of the cocoyx and the part of both femora and other part of the legs are damaged.

Outline of the skeleton:

The total length from the anterior margin of the skull to the posterior end of pelvic girdle is 167 mm. Length of the skull 73 mm, breadth of the same, 81 mm. It is apparently the larger specimen of this genus, perhaps bigger than the recent form.

Although the skull is well preserved, the boundaries of different bones are not possible to see. But the minute teeth and the other major part of the skull is mostly detectable. The vertebrae and the pectoral and the pelvic girdles are traceable, especially the later. They are essentially the same as all the anurans and need not to describe in detail.

The scapula, clavicle and coracoid are also well presewed, especially the right side (in the slab is the left one).

The anterior limb of the specimen, are not so good but much better seem in the negative slab.

Very well preserved is the posterior limbs.

II, Chiroptera

Family: Vespertilionidae
Genus: *Shanwangia* gen. nov.
Species: *Shanwangia unexpectata,* sp. nov.

In the study of the present specimens, the most interesting feature is that a specimen with positive and negative is well preserved. In observation of the specimen, the most important conclusion can be made.

Material: As noted above.

Locality and Horizon: Shanwang, Linqu, Shandong, Miocene.

Description: (See plate II) It is a whole view in ventral side, with the body expanded. As in other specimens, the outline of the membrane is even well preserved unfortunately due to the distortion of the anterior body, the vertebrae of the neck and the breast are not able to determine. The caudal vertebrae is about 9—10.

The pectoral girdle and the anterior limbs are all well preserved, especially the humerus and following bone. It is interesting to note that the claws of the fingers are very well visiable.

The posterior limbs are also well preserved. They are very similar to all bats and not need to describe in detail.

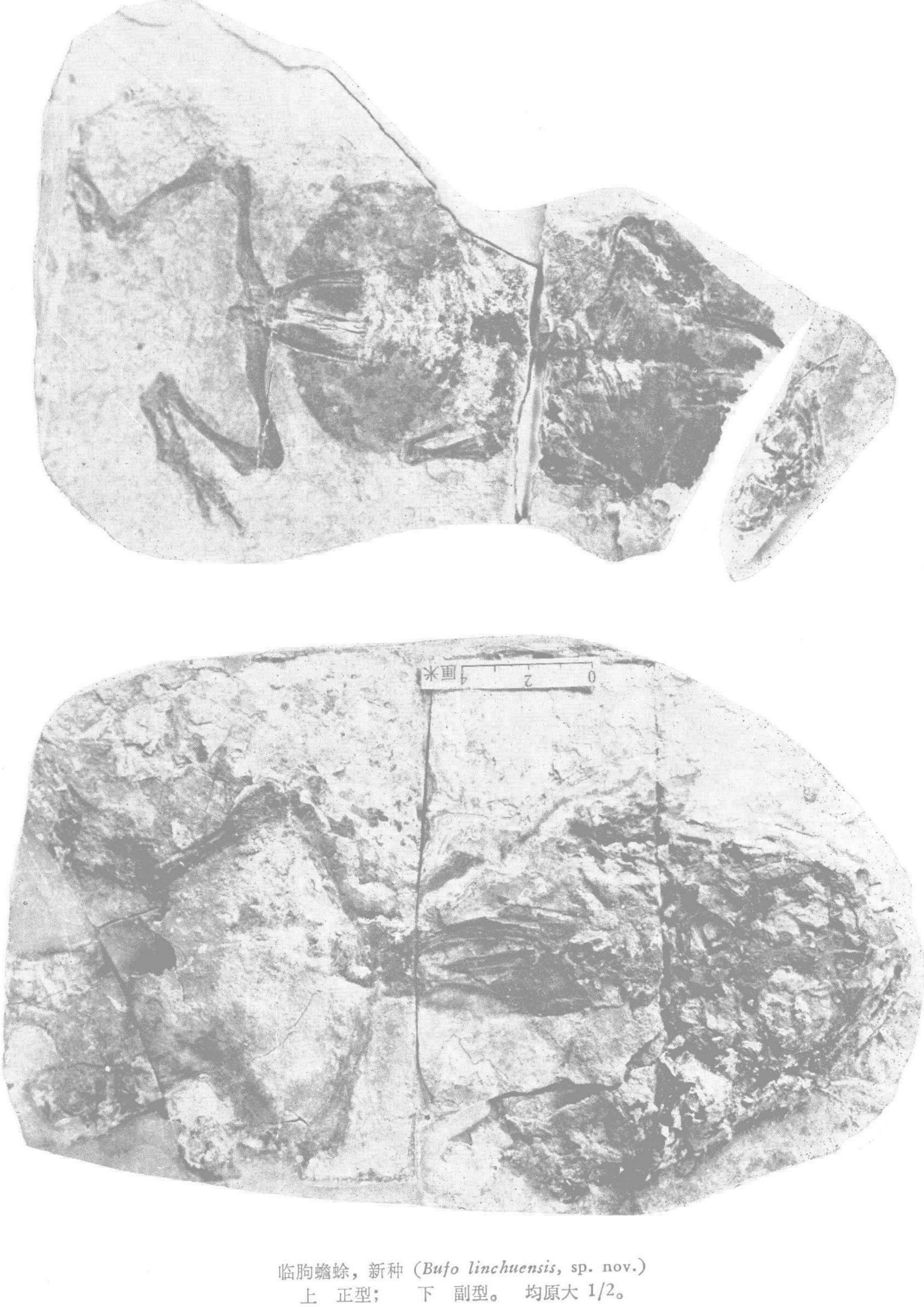
Determination and Discussion

Based upon the forgoing description of the specimen it is very clearly that we have to deal with a new member of the Shanwang fauna. This new chiroptera is here considered as new genus with the leading species *Shanwangia unexpectata*. Its diagnosis is given as follow:

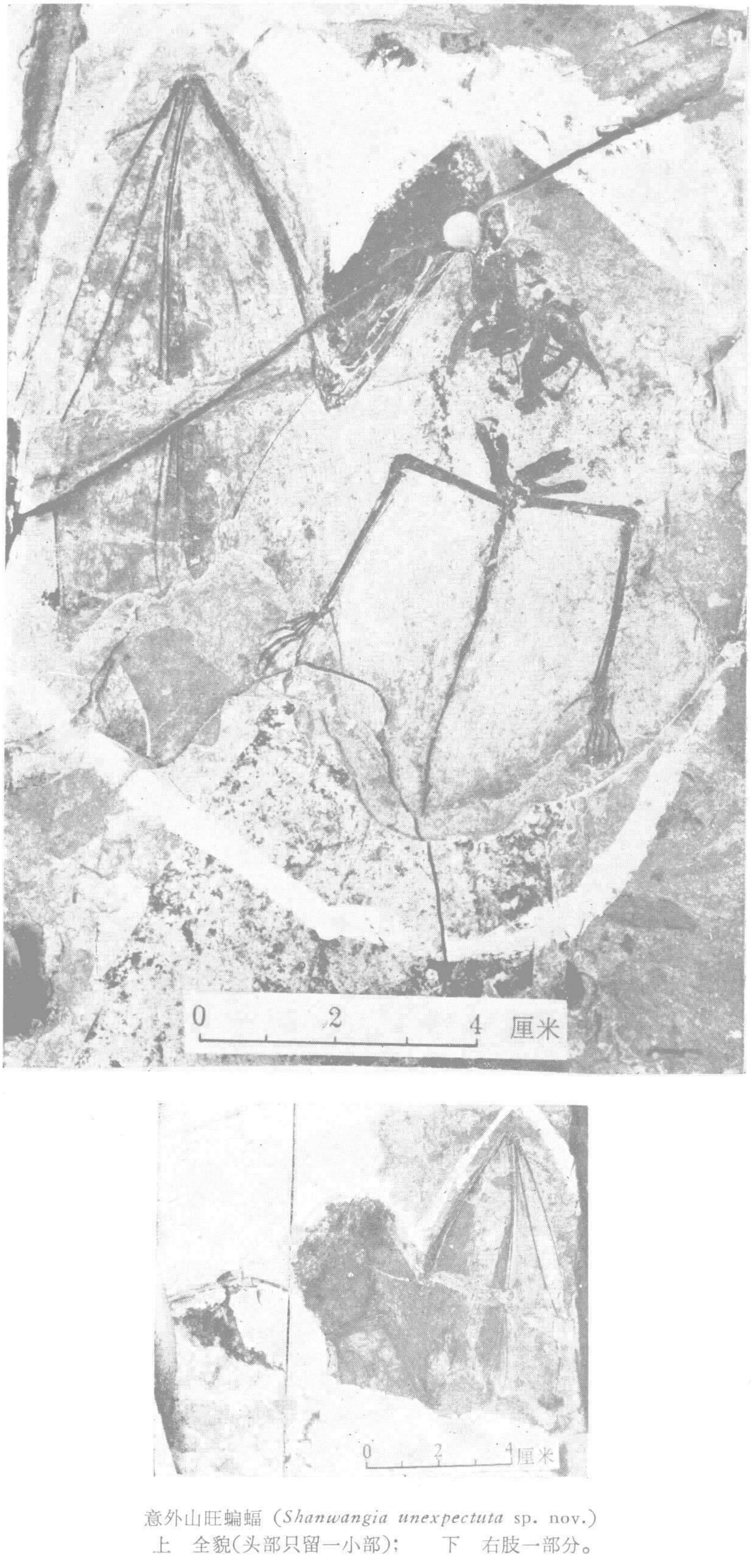
A rather large bat. Its total length is about 100 mm. Consider as a whole, the skull is rather small. Length of the caudal vertebrae are 9—10. The anterior limb are especially large. Most of the measurement are quite near to the early Eocene bat of wyoming U.S.A. It also bears claw in the anterior phalanges.

As we know, the Wanchuan shue of Shanwang is capped by basalt in the vicinity of the site. There is no distribution of any limestone with cave or rock shelter, which may house the bats. In this case it is quite unexpected to find this bat in Shanwang.

As shown in the picture it was flying with the membrane expended and dying in the upper layer of the stratum.



临朐蟾蜍，新种 (*Bufo linchuensis*, sp. nov.)
上 正型； 下 副型。 均原大 1/2。



意外山旺蝙蝠 (*Shanwangia unexpectuta* sp. nov.)
上　全貌(头部只留一小部)；　下　右肢一部分。